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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/543,029

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Emmanuel Legrand

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EXAMINER

PAYER, HWEI SIU CHOU

ART UNIT

PAPER NUMBER

3724

MAIL DATE

DELIVERY MODE

06/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/543,029	Applicant(s) LEGRAND, EMMANUEL	
	Examiner Hwei-Siu C. Payer	Art Unit 3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

The amendment filed on 4/2/08 has been entered.

Claims Rejection - 35 U.S.C. 103(a)

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10, 13, 14, 16-22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballas et al. (U.S. Patent No. 4,054,992) in view of Morabit et al. (U.S. Patent No. 6,314,848) and Moore et al. (U.S. Patent No. 6,401,344).

Ballas et al. shows (see Fig.4) a cutting head (64) having substantially all the claimed structure except for the location and the shape of the passageway (66), and further Ballas et al. shows one passageway (66) rather than two.

Morabit et al. shows an alternative location for the cutting string passageway. Specifically, as shown in Fig.33 of Morabit et al., the cutting string passageway is located at a distance from a rotation axis (defined by the mounting opening 102) of the cutting head, and there is an additional cutting string passageway spaced from the rotation axis of the cutting head and opposite the first cutting string passageway.

Thus, it would have been obvious to one skilled in the art to modify Ballas et al. by having the passageway (66) spaced from the rotational axis of the cutting head (64) and by providing the cutting head (64) with an additional passageway for receiving additional cutting string to aid in a more efficient cutting operation as taught by Morabit et al.

It is noted the cutting string passageway (66) of the modified Ballas et al. presenting a curvilinear configuration for preventing the cutting string (67) from sliding away.

Moore et al. shows a linear cutting string passageway (i.e. the channel for receiving the cutting string 39 as seen in Fig.8) cooperating with a clamp (15) for retaining the cutting string (39) in the passageway.

In view of this teaching, it would have been obvious to one skilled in the art at to further modify Ballas et al. by making the passageway (66) linear for cooperating with a clamp for retaining the cutting string (67) in the passageway because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.

It is noted, in the above modified Ballas et al., the radius of curvature of the curved portion (63) does not appear to be variable.

However, as evidenced by applicant's claims 4, 5, 16 and 17, the radius of curvature of the curved portion can be either constant or variable, and it appears the claimed "variable" radius of curvature has no criticality. Therefore, to have the curved portion of Ballas et al. present a radius of curvature that is variable as desired would have been obvious to one skilled in the art.

3. Claims 11, 12, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballas et al. (U.S. Patent No. 4,054,992) in view of Morabit et al. (U.S. Patent No. 6,314,848) and Moore et al. (U.S. Patent No. 6,401,344) as applied to claims 1 and 14 above, and further in view of Morabit et al. (U.S. Patent No. 5,761,816).

Ballas et al. as modified shows all the claimed structure except it does not explicitly mention the cross-section of the cutting string (67) is polygonal.

However, cutting strings having a polygonal cross-section are well known in the art as evidenced by Morabit et al.

Therefore, it would have been obvious to one skilled in the art at the time this invention was made to select a well-known cross-sectional shape such as "polygonal" for the cutting string of Ballas et al.

Regarding claims 12 and 24, the claimed size of the cutter string is not patentably distinct over Ballas et al. as modified since the size of the cutter string depends more upon the size of its associated string receiving passage than on any inventive concept.

Remarks

Applicant's arguments with respect to claims 1-14 and 16-24 have been considered but are moot in view of the new ground(s) of rejection.

Point of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hwei-Siu C. Payer whose telephone number is 571-272-4511. The examiner can normally be reached on Monday through Friday, 7:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on 571-272-4502. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for official communications and 571-273-4511 for proposed amendments.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

H Payer
June 9, 2008

/Hwei-Siu C. Payer/
Primary Examiner, Art Unit 3724